

LISTING OF THE CLAIMS:

1. (previously amended) A mass/solution polymerization process utilizing a functionalized rubber to produce a rubber modified polymer from a vinyl aromatic monomer comprising polymerizing the vinyl aromatic monomer in the presence of a rubber, wherein the rubber comprises a functionalized diene rubber having:

- a) a solution viscosity of from 5 to less than 50 centipoise (cps), and
- b) at least one functional group per rubber molecule which enables controlled radical polymerization;

such that grafted rubber particles are formed and dispersed within a matrix comprising polymerized vinyl aromatic monomer and have a broad monomodal size distribution.

2. (original) The process of Claim 1 wherein the vinyl aromatic monomer is styrene.

3. (original) The process of Claim 1 wherein the vinyl aromatic monomer is copolymerized with acrylonitrile.

4. (original) The process of Claim 1 wherein the functionalized diene rubber is a styrene/butadiene block copolymer rubber.

5. (original) The process of Claim 1 wherein the functionalized diene rubber has a solution viscosity of 5 weight percent in styrene at 20°C of less than 45 cps.

6. (previously amended) The process of Claim 1 wherein the functionalized diene rubber contains a functional group which enables controlled radical polymerization through formation of a stable free radical.

7. (original) The process of Claim 6 wherein the functionalized diene rubber contains a nitroxide functional group.

8. (original) The process of Claim 6 wherein the functionalized diene rubber contains a functional group selected from 2,2,6,6-tetramethyl-1-piperidinyloxy (TEMPO); 2,2,6,6-tetramethyl-1-[1-[4-(oxiranylmethoxy)phenyl]ethoxy]-piperidine; or 3,3,8,8,10,10-hexamethyl-9-[1-[4-(oxiranylmethoxy)phenyl]ethoxy]-1,5-dioxo-9-azaspiro[5.5]undecane.

9. (previously amended) The process of Claim 1 wherein the functionalized diene rubber contains a functional group which enables controlled radical polymerization through atom transfer radical polymerization.

10. (previously amended) The process of Claim 1 wherein the functionalized diene rubber contains a functional group which enables controlled radical

polymerization through reversible addition-fragmentation chain transfer
polymerization.

11. (original) The process of Claim 1 wherein the polymerization is
conducted in the presence of a chain transfer agent.

12. (original) The process of claim 1 wherein the polymerization is conducted
in the presence of an initiator.

13. (original) The process of claim 1 wherein the polymerization is
conduction in the presence of an initiator and a chain transfer agent.

14. (canceled)

15. (canceled)

16. (canceled)

17. (original) The process of claim 1 wherein a portion of a partially
polymerized feed is recirculated to an earlier polymerization stage.

18. (original) The rubber modified polymer produced by the process of Claim
1.

19. (original) An article or composition comprising the rubber modified
polymer of Claim 18.